

Welcome to the REMAR_CIDADÃO app webpage from the Crab Reproductive Migrations Monitoring Network, REMAR. Here, you can access and view quantitative analyses of the reproductive migrations of the Uçá crab (*Ucides cordatus*) and the Guaíamum crab (*Cardisoma guanhumi*) along the Brazilian coast, as observed and reported by citizen scientists who used this app. We are very grateful for your contributions and hope you continue using the app. The REMAR_CIDADÃO app version 2.0 can be downloaded for free from Google Playstore.

The data received through the app will help us assess and improve the fishery management and conservation of these important fishery resources. The analyses on this webpage can be accessed by species, state, conservation unit, year, and month. Data is available starting from the 2020/2021 season.

We hope you enjoy exploring the data.

More about REMAR
What is REMAR?

Founded in 2013, REMAR is a network of researchers from various locations and institutions in Brazil and Scotland, studying the occurrence of reproductive migrations of crabs. REMAR conducts field sampling using a rapid assessment method, which involves counting crabs during migrations at various locations across Brazil, from north to south. Additionally, REMAR developed the REMAR_CIDADÃO app, which allows for participatory monitoring where local communities and the general public can provide information about the occurrences of crab migrations (citizen science).

REMAR webpage: <https://ufsb.edu.br/remar/>

Why the Uçá crab and the Guaíamum?

The Uçá crab (*Ucides cordatus*) lives in burrows in the mud and feeds primarily on mangrove leaves, making it highly important to the mangrove food web. The Guaíamum crab (*Cardisoma guanhumi*) digs its burrows in restinga areas, one of the habitats most threatened by unregulated human occupation. Both species engage in migrations, during which they become extremely vulnerable to capture, not only by professional harvesters but also by the general public, which can jeopardize the sustainability of their fisheries.

Why is it important to know when migrations occur?

During migrations, crabs are reproducing, and it is during this period that they are exposed outside their burrows and can be captured in large quantities, even by people who do not rely on crab harvesting for their livelihood. For this reason, to allow for more sustainable use of these fishery resources and to conserve the species, legislation prohibits crab harvesting during migration periods in most Brazilian states. Before REMAR began providing guidance for fisheries management, there was no tool to predict whether migrations would occur around the new or full moon in any given month. As a result, most states prohibited crab harvesting during both lunar phases as a precaution. When enforcement occurred during a period without migration, crab collectors were unable to work or had their crabs confiscated unnecessarily. Additionally, enforcement operations were carried out needlessly, wasting public resources that could have been used for crab management and conservation.

The goal of REMAR

Our goal is to enable the sustainable use of crabs, conserve the species, and avoid the socioeconomic problems that can arise from incorrect harvest prohibition periods. To achieve this, REMAR developed a tool that allows for robust predictions of the lunar phases during which crab migrations will occur in future years. Since 2020, these predictions have been used to draft regulatory instructions for the suspension of Uçá crab harvesting during their reproductive period in northern and northeastern Brazil. Accurate predictions of migration occurrences provide important advantages: during NON-migration periods, allowing harvesting enables harvesters and traders to earn income, prevents conflicts between regulatory bodies and harvesters, avoids the waste of public resources on unnecessary enforcement, and increases the credibility of the scientific community among harvesters, decision-makers, and managers, encouraging greater adherence to harvest suspensions. Thus, properly suspending harvesting only during migration periods allows for greater public participation and better allocation of resources for more efficient enforcement operations. The result is more effective fisheries management and more sustainable harvesting.

Who are we?

We are researchers from universities and research centers dedicated to studying marine animals, especially crabs that are ecologically and socioeconomically important.

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What happens to the data received by the app?

The data received through the app is sent to a data server hosted at Edinburgh Napier University. Metadata can be viewed by the general public through predefined queries on the REMAR webpage at UFSB (data available from the 2020/2021 season onwards). REMAR will use the data in reports and publications and will acknowledge anonymous app users in the acknowledgments sections.